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June 14th, 1994

Mr. William Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W.  
Washington, D.C. 20554

RECEIVED

JUN 15 1994

FCC MAIL ROOM

Re : ET Docket No. 94-32

Dear Mr. Caton:

Transmitted herewith are an original and nine (9) copies of the Comments of Western Multiplex Corporation in response to the above Notice of Inquiry by the Commission released on May 4th, 1994.

Please address any questions concerning this matter directly to the undersigned.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'Graham Barnes'.

Graham Barnes  
Director of Marketing

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Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, DC 20554

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JUN 15 1994

FCC MAIL ROOM

In the Matter of )

Allocation of Spectrum Below )

5 GHz Transferred from )

Federal Government Use )

ET Docket No. 94-32

To : The Commission

## COMMENTS

on

## NOTICE OF INQUIRY

by

**WESTERN MULTIPLEX CORPORATION**

## **I. INTRODUCTION**

1. Pursuant to Sections 1.415 and 1.419 of the Commission's Rules, Western Multiplex Corporation (WMC) hereby submits these comments on the proceeding to seek information on potential applications for 50 MHz of spectrum that is being transferred immediately from Federal Government to private sector use as required by the Omnibus Budget Reconciliation Act of 1993.

2. WMC hereto presents the following comments on the relevant issues in each of the three bands comprising the 50 MHz of spectrum.

3. WMC is the manufacturer of a spread spectrum point-to-point microwave radio operating in the frequency band 2400 - 2483.5 MHz under rule section 15.247. WMC believes that clear and simple rules are essential for stimulating the development of new technologies and services, and that it is in the public interest to implement reallocations consistent with existing allocations that are currently meeting or have significant potential to meet demonstrated public needs.

4. WMC notes that an explosion of economic growth, competition and enhanced access to private services have specifically resulted from the adoption of clear and simple rules for the use of non-licensed spread spectrum equipment in the industrial, scientific and medical (ISM) bands. This growth is indicative of the success of the

Commission's policy toward promoting the use of the efficient spread spectrum technologies. Thus, any portion of the 50 MHz of spectrum for allocation that is in the ISM bands should be established on rules for non-licensed operation rather than licensed operation. In addition, because the majority of spectrum has been allocated to licensed services, there is a clear public need for more spectrum to be allocated to non-licensed use.

## **II. 2390 - 2400 MHz**

1. WMC accepts the desire of the Department of Commerce to protect the planetary research radar at Arecibo, Puerto Rico on 2380 MHz. Although allocating this spectrum to non-licensed use would create a larger market compared to the more restricted licensed use, in this case it would be difficult to provide adequate protection to the Arecibo installation without station licensing.

2. WMC proposes that this band be allocated to a new service similar to Part 101 Private/Common Carrier licensed use, on a primary basis, for terrestrial private mobile operations, and fixed support operations, outside the vicinity of the Arecibo installation. This proposal is consistent with a need to assist with the re-allocation of 2 GHz bands from existing private users to Part 99 personal communications services (PCS) and may speed up the transition.

3. Recent experience with plans to allocate 10 MHz, 20 MHz and 30 MHz bandwidths to licensed PCS demonstrates that this band could not support use in any major market for licensed communications services, such as PCS, because of the small bandwidth available (10 MHz).

4. Although this band is much smaller than that requested by COPE (75 MHz), some accommodation to support new operations such as advanced wireless imaging and decision processing/remote file access systems could be made under this proposal for Advanced Private Land Mobile Communications Services.

5. The frequency plan suggested under this proposal is as follows :

(a) 1.25 MHz channels (7.5 MHz T-R spacing)

2390.625 MHz xmt (rcv) 2398.125 MHz rcv (xmt)

2391.875 MHz xmt (rcv) 2399.375 MHz rcv (xmt)

(b) 2.5 MHz channel (7.5 MHz T-R spacing)

2391.25 xmt (rcv) 2398.75 rcv (xmt)

(c) 5 MHz channel : 2395 MHz (simplex, half-duplex or TDMA with or without CDMA, point-point or point-multipoint operation)

(d) 10 MHz channel : 2395 MHz (simplex, half-duplex or TDMA with or without CDMA, point-point or point-multipoint operation)

6. No licenses would be available in Puerto Rico.

### **III. 2402 - 2417 MHz**

1. This band is part of the 2400 - 2483.5 MHz ISM band which is currently being successfully exploited by new spread spectrum technology under Part 15.247. The absence of primary Federal Government users in this band will considerably enhance its appeal, particularly for outdoor applications. A widespread public need for equipment operating under the existing provisions of 15.247 is clearly demonstrated by the sale and use of these products throughout the United States. Users of WMC equipment in this band include :

- manufacturing and service companies
- educational institutions
- public safety agencies
- mobile, SMR and ESMR operators
- cellular telephone operators
- power utility companies
- oil and gas pipeline companies
- railroads
- common carriers
- federal, state and local governments

2. As shown above, the public would clearly benefit from being able to continue to obtain non-licensed products that can be swiftly installed in a wide variety of

applications. These products are currently designed, and are being designed, to operate in the bands available, including the 2400 - 2483.5 MHz band. Elimination or restriction of these products would needlessly subject the public to the delay and significant expense of frequency coordination required with the use of licensed equipment. Further, many users would be unable to obtain licenses, because of the usual coordination difficulties.

3. The telecommunications industry has witnessed the turmoil caused by mixing licensed use by Teletrac together with non-licensed use in the 902 - 928 MHz ISM band. Therefore, because the combination of licensed and non-licensed services is not compatible, licensed services should not be added to non-licensed services in the same frequency band, especially in any part of the ISM bands.

4. Therefore, WMC strongly proposes that existing Part 15 users should continue with secondary use of the 2402 - 2417 MHz band, and **no reallocation is necessary**. In fact, any reallocation of this band, or restriction in the use of spread spectrum equipment in this band, will have the unintended effect of interfering with and seriously reducing the development of new technology, economic growth and competition of equipment and services providing wireless access to private services. It is in the public interest to maintain the ability to respond to the needs of existing and emerging non-licensed, outdoor, communications systems with a wider variety of technologies, products and capabilities. This public interest will be seriously damaged if this band is reallocated.

5. WMC proposes that the 2400 - 2483.5 MHz ISM band be wholly re-allocated to secondary use and all primary users of any part of this band be accommodated elsewhere. This proposal will eliminate any potential user conflicts and maximize the efficiency of spectrum usage in this band.

#### **IV. 4660 - 4685 MHz**

1. This band offers 25 MHz of spectrum which, according to the Notice of Inquiry is not currently being used for any non-Government services. WMC believes that this band is generally less suitable to mobile services and should be re-allocated on a primary basis to fixed private and common carrier services. WMC would support a proposal to reallocate this band to licensed or non-licensed fixed use and would prefer to increase the availability of non-licensed spectrum with spread spectrum coding to provide the maximum efficiency of usage. However, in order to protect the agreement with Canada, WMC understands that it will probably be necessary to coordinate transmitters and license every station.

2. Therefore, WMC suggests that the reallocation of the 4660 - 4685 MHz band should be similar to our proposal for the reallocation of the 2390 - 2400 MHz band. The 4660 - 4685 MHz band should be allocated to fixed services to support Advanced Private Land Mobile Communications Services.



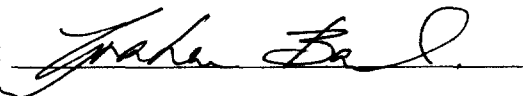
## V. CONCLUSION

In summary, WMC proposes that no reallocation of the 2402 - 2417 is necessary and no additional restrictions need be placed on the use of spread spectrum equipment operating in the ISM bands. WMC proposes that the 2400 - 2483.5 MHz ISM band should be re-allocated exclusively for secondary use with no primary services in this band.

WMC would like additional spectrum to be made available for non-licensed spread spectrum use. However, WMC concludes from the available evidence that the 2390 - 2400 MHz band and the 4660 - 4685 MHz band would not be suitable for non-licensed use. Therefore, WMC proposes that this spectrum be made available for urgently needed new private services with channelization plans capable of multiple uses.

Respectfully submitted,

WESTERN MULTIPLEX CORPORATION

By : 

Date : June 14th, 1994

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Director of Marketing

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